DakoCytomation

Monoclonal Mouse Anti-Human Cytokeratin 10/13

Clone DE-K13

Code No. M 7003

For research use only. Not for use in diagnostic procedures.

Recommended use

Monoclonal Mouse Anti-Human Cytokeratin 10/13, Clone DE-K13, is recommended for use in immunocytochemistry. In formalin-fixed, paraffin-embedded tissue the antibody labels suprabasal cell layers of non-cornifying stratified epithelia, corresponding to cytokeratin 13 (1, 2), while in frozen sections, the antibody labels suprabasal cell layers of both cornifying and non-cornifying stratified epithelia, corresponding to cytokeratin 10 and 13 (3).

Introduction

Cytokeratins are alpha-type fibrous polypeptides with a diameter of 7-11 nm. They are important components of the cytoskeleton in almost all epithelial cells as well as in some non-epithelial cell types. Cytokeratins are, generally, held to be the most ubiquitous markers of epithelial differentiation, and, so far, 20 distinct types numbered by Moll (4, 5) have been revealed. In contrast to other intermediate filaments, cytokeratins are made up of a highly complex multigene family of 40 to 68 kDa polypeptides. They can be divided into an acidic (type I) and a neutral-basic (type II) subfamily (4, 5). Cytokeratin 10 is an intermediated sized, acidic type I cytokeratin, with a molecular mass of 56.5 kDa, expressed only in epidermis of most body locations (4). Cytokeratin 10 expression is absent in basal cells but abundently expressed in all suprabasal cells simultaneously with cytokeratin 1. Together they represent one of the first markers of epidermal differentiation (5, 6). Cytokeratin 13 is also an intermediate sized, acidic type I cytokeratin, although with a molecular mass of 54 kDa. It is a major component of several non-cornified stratified epithelia, including tongue mucosa, oesophagus, anal canal epithelium, tracheal epithelium, uterine cervix and urothelium (1, 2, 4).

Reagent provided

Monoclonal mouse antibody provided in liquid form as cell culture supernatant dialysed against 0.05 mol/L Tris/HCl, pH 7.2, and containing 15 mmol/L NaN_3.

Clone: DE-K13 (3). Isotype: IgG2a, kappa.

Mouse IgM concentration: See label on vial.

Immunogen

Cytoskeletal preparation extracted from human ectocervical epithelium (3).

Specificity

In two-dimensional immunoblotting of A431 cells, a human vulvar squamous carcinoma cell line, the antibody labels dots corresponding to cytokeratin 13. The antibody also labels cytokeratin 10 in immunoblotting of cytokeratin-enriched cytoskeletal proteins isolated from human tissue (3).

The antibody cross-reacts with CK 10/13 of feline origin (3).

Precautions

1. The device is not intended for clinical use including diagnosis, prognosis, and monitoring of a disease state, and it must not be used in conjunction with patient records or treatment.

2. This product contains sodium azide (NaN_3), a chemical highly toxic in pure form. At product concentrations, though not classified as hazardous, sodium azide may react with lead and copper plumbing to form highly explosive build-ups of metal azides. Upon disposal, flush with large volumes of water to prevent metal azide build-up in plumbing.

3. As with any product derived from biological sources, proper handling procedures should be used.

Storage

Store at 2-8 °C. Do not use after expiration date stamped on vial. If unexpected staining is observed which cannot be explained by variations in laboratory procedures and a problem with the antibody is suspected, contact our Technical Services.

Specimen preparation

Paraffin sections: The antibody can be used for labelling paraffin-embedded tissue sections fixed in formalin. Pre-treatment of tissues with heat-induced epitope retrieval is required. For heat-induced epitope retrieval, 10 mmol/L Tris buffer, 1 mmol/L EDTA, pH 9.0, was found efficient, whereas 10 mmol/L citrate buffer, pH 6.0; DakoCytomation Target Retrieval Solution, code No. S 1700; and DakoCytomation Target Retrieval Solution, High pH, code No. S 3308 were found less efficient. Pre-treatment of tissues with proteinase K should be omitted. The tissue sections should not dry out during the treatment or during the following immunocytochemical staining procedure.

Frozen sections and cell preparations: The antibody can be used for labelling acetone-fixed, frozen sections and cell preparations (3).

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Staining procedure

Dilution: Monoclonal Mouse Anti-Human Cytokeratin 10/13, code No. M 7003, may be used at a dilution range of 1:100-1:200 when applied on formalin-fixed, paraffin-embedded sections of human tonsil and using 15 minutes heat-induced epitope retrieval in 10 mmol/L Tris buffer, 1 mmol/L EDTA, pH 9.0, and 30 minutes incubation at room temperature with the primary antibody. Optimal conditions may vary depending on specimen and preparation method, and should be determined by each individual laboratory. The recommended negative control is DakoCytomation Mouse IgG2a, code No. X 0943, diluted to the same mouse IgG concentration as the primary antibody.

Visualization: DAKO LSAB™+/HRP kit, code No. K 0679, and DAKO EnVision™+ /HRP kits, code Nos. K 4004 and K 4006, are recommended. For frozen sections and cell preparations, the DakoCytomation APAAP kit, code No. K 0670, is a good alternative if endogenous peroxidase staining is a concern. Follow the procedure enclosed with the selected visualization kit.

Performance characteristics

Cells labelled by the antibody show a cytoplasmic staining pattern (1, 2).

Normal tissues: On cryostat sections the antibody labels suprabasal cells and stratum corneum in the epidermis, suprabasel cells in esophagus and ectocervix, urothelium and thymic Hassal's bodies. The antibody displays heterogeneous staining of hair follicles. The basal cells of both epidermis, oesophagus and ectocervix, as well as sebaceous gland, endocervix, mammary gland, hepatocytes, bile ducts, lung and stomach mucosa is not stained by the antibody (3).

In formalin-fixed, paraffin-embedded tissue the antibody labels the entire thickness of the epithelium except the basal cells in normal oesophageal epithelium (3) and in normal ectocervix (2).

References

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2. van Bommel PFJ, Kenemans P, Helmerhorst TJM, Gallee MPW, Ivanyi D. Expression of cytokeratin 10,13, and involucrin as prognostic factors in low stage squamous cell carcinoma of the uterine cervix. Cancer 1994;74:2314-20.
3. Ivanyi D, Minke JMHM, Hageman C, Groeneveld E, van Doornewaard G. Patterns of expressionof feline cytokeratins in healthy epithelia and mammary carcinoma cells. Am J Vet Res 1992;53:304-14.
4. Moll R, Franke WW, Schiller DL, Geiger B, Krepler R. The catalog of human cytokeratins: patterns of expression in normal epithelia, tumors and cultured cells. Cell 1982;31:11-24.
5. Moll R. Cytokeratins as markers of differentiation in the diagnosis of epithelial tumors. Subcellular Biochem; Intermediate Filaments. Herrmann, Harris, editors. Plenum Press, New York; 1998. :Volume 31.p 205-60.
6. Ivanyi D, Asink A, Groeneveld E, Hageman PC, Mooi WJ, Heintz APM. New monoclonal antibodies recognizing epidermal differentiation-associated keratins in formalin-fixed, paraffin-embedded tissue. Keratin 10 expression in carcinoma of the vulva. J Pathol 1989;159:7-12.

Explanation of symbols

REF	Catalogue number	2 °C 8 °C	Temperature limitation		Use by
	Consult instructions for use	LOT	Batch code		Manufacturer

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